

U13

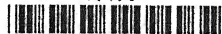
Working Paper No. 126

Constraints in The Economic Development of Uttarakhand The Situation of Agriculture Sector

G. S. MEHTA

GIDS Library

40496



1338.1 MEH

I
330.1
MEH

GIRI INSTITUTE OF DEVELOPMENT STUDIES

Sector O, Aliganj Housing Scheme

Lucknow-226 020

CONSTRAINTS IN THE ECONOMIC DEVELOPMENT
OF UTTARAKHAND : THE SITUATION OF
AGRICULTURE SECTOR

40496

I
338.1
MEH

1. Agricultural Development
2. Girti Institute of Development Studies

G S MEHTA

GIRTI INSTITUTE OF DEVELOPMENT STUDIES
Sector O, Aliganj Housing Scheme
Lucknow 226 020

CONSTRAINTS IN THE ECONOMIC DEVELOPMENT OF UTTARAKHAND: THE SITUATION OF AGRICULTURE SECTOR

Introduction

Despite the rapid strides made in agriculture, manufacturing and related productive sectors of Indian economy to increase the level of productivity so as to enhance the opportunities of employment and income and to achieve an overall development over the last forty years; inter-regional, inter-sectoral and inter-class disparities in the process and level of development still loom large in the economy. The backward area or differential area-cum-target approach of planning for development has also not been successful in preventing from such growing inequalities. In fact the differences in the process of socio-economic development between already developed and underdeveloped regions are further widening. This emerging problem has existed basically due to the result of the lack of proper planning approaches introduced and the lack of required attention paid in the need of specific locations and regions of the country at the time of the identification, finalisation and initiation of the development programmes. Besides this, proper implementation of introduced development

programmes for different identified areas is lacking due to the nature of the programmes being as target oriented and inadequate evaluation and monitoring practices for the success of programmes are adopted at different stages of their implementation.

The Uttarakhand region is among the most underdeveloped regions of India, is situated on the northern part of the state of Uttar Pradesh. This region is a part of Central Himalayan range extends over an area of about 51.25 thousand sq.kms. which accounts for nearly 17 per cent of the area of the state. For the administrative purposes the Uttarakhand is divided into two divisions - Kumaun and Garhwal. Of the eight districts representing Uttarakhand region three districts namely Almora, Nainital and Pithoragarh constitute the Kumaun division and remaining five districts, Dehradun, Pauri Garhwal, Uttarkashi, Tehri Garhwal and Chamoli constitute the Garhwal division. However, some part of districts Nainital and Dehradun falls in plains area of the state. It may be mentioned here that as a matter of fact the inclusion of district Dehradun and Nainital in hill region has created some confusion and misunderstanding about the stage and rate of development of Uttarakhand region. The elevation of Uttarakhand extends from approximately 300 metres to 7000 metres above sea level and the temperature ranges from 16°C to 40° but normally it goes upto freezing point even -5° during winter.

The Potential Resources

The Uttarakhand region plays an important role in the economy of the Uttar Pradesh in terms of providing off season vegetables, supply of different temperate fruits, forest products and several other resources including manpower resources. The region possesses substantial natural resources such as timber, fuelwood, fodder, medicinal herbs, resin which offer tremendous potentials for development. Its natural water resources such as natural springs, water falls and perennial streams are used for generating hydro-electric power and providing irrigation and drinking water. Its high mountains provide a natural protection against the icy-cold winds from Siberia winter and a natural defence against the outside attack from enemy in the north. Various kinds of agro-climatic conditions available in the region provide favourable potential for the development of horticulture, floriculture and forestry. The temperature and climate of the entire region is regarded significantly much suitable for the establishment of very sophisticated high-tech manufacturing units like electronic and precision industries. The region is also rich in mineral resources. Lime, magnesite, gypsum, sand stone, rock, phosphate, asbestos, graphite, copper and lead are available in this region.

Historically the region has been considered a famous place for its calm and quiet environment conducive to the pursuit of yoga. The holy Ganga, Alaknanda, Sarswati, Pinder

Mandakini and several other important holy rivers flow in the region and are the additional sources for increasing the natural beauty of Uttarakhand. Many pilgrimage places of Hindus like Kedarnath, Badrinath, Nandakhat, Sahastradhara, etc. are located here. These all available sources of attraction and worship along with the natural changing beauty flora and fauna, bracing climate all the year around in Uttarakhand are the additional natural resources for the attraction of tourists.

Growth of Population and the Situation of Employment

The population of the region as per 1991 census is 5.87 millions which constitutes 4.23 per cent population of the state. People living in the region mainly depend on agriculture for their livelihood. Due to non-availability of the opportunities of employment and income outside agriculture activities the pressure of population is unprecedentedly increasing on it. As per 1991 Census the main occupation of 50.48 per cent workers in the region is agriculture and around 92 per cent of the population is depending on agriculture making it as a main source of their livelihood.

In Uttarakhand, unprecedentedly increasing volume of population and larger addition of population in the category

of labourforce for last couple of decades has also been another serious problem and an issue of discussion among social scientists, policy makers, administrators and those engaged in the developmental planning of Uttarakhand. A rapid growth of job seekers, due to increasing trend of population, has emerged as one of the major and disconcerting social and economic problem. Because the growth of employment opportunities has lagged far behind than the increasing trend of labourforce and the result has been a high and increasing extent of unemployment. Since agriculture is mainly providing employment in the region which expansion and development is rather difficult task due to certain geographical and other regional problems. The technology used in the farming system is outdated which cannot be replaced by modern scientifically improved technologies due to the problem of the existence of small size of holdings. In fact the modern developed fertilizers pesticides and chemicals, which can boost agricultural productivity to a certain extent, have also certain limitations in their application. These improved inputs can be applied only in the irrigated land area while the net irrigated land in Uttarakhand is not even one-third of the total cultivated land area.

Thus the major burden of the growing labourforce has fallen on agricultural activities. No doubt, the non-agricultural activities are also observed significantly increasing in Uttarakhand. As per Census documents a

decrease in the percentage of workers in agricultural and allied sectors (Primary Sector) and their shift into other economic sectors (mainly in Tertiary Sector) is well witnessed. However, the occupational shift of workers is only around two per cent. Therefore, the arguments are that there is not much significance attached herewith the smaller percentage of shift of workers into other non-agricultural activities in the sense that the nature of this occupational mobility of workers is for only shorter duration. Because these occupations are purely associated with the informal sector economies which are generated under the approaches of various employment guarantee schemes of rural development programmes.

On the whole, the growth of population and labourforce in Uttarakhand is pronounced to be at much higher level while the opportunities of productive employment are not increasing to that extent. Accordingly low level of agricultural productivity and lack of employment opportunities in other economic sectors - secondary and tertiary sectors, have enforced the condition of underemployment and disguised unemployment in Uttarakhand. As a consequence, a serious problem of the region is well experienced by higher rate of out-migration of male labourforce outside the region in the plain areas for the purpose of seeking employment opportunities. It has been estimated that the rate of out-migration is as high as 57 per cent in Uttarakhand, which constitute around 24 per cent of the population of

Uttarakhand region. On the other hand a study of Khanka (1988) observed that the continuous increase in population without corresponding outlet in employment opportunities has compelled able-bodied young men to move elsewhere to take out their livelihood and to support those left behind in the region. On an average the districts of Pithoragarh and Almora each have lost 10 per cent of their population due to migration of their population outside the respective districts.

Development Strategies

The Uttarakhand region has remained to be an economically depressed and politically ineffective since very beginning of the British rule in India, even today. The story of British rule in this region was the story of destruction of its isolation and self-sufficiency, increasing disruption of the traditional mode of livelihood of its people with the appearance of new economic opportunities and the dream of its material and human resources outside the region (Joshi 1983). After independence several new approaches towards the development of different regions in the country were emphasized with the introduction of the First Five Year Plan in 1951. Although the Uttarakhand has been recognised as a underdeveloped and backward region of Uttar Pradesh since the very first of the initiation of

India's First Plan. However, the first two Five Year Plans, neither of the Central or State Government has made any initiative under their planned development strategies towards making any development approach for this backward region. This could be probably due to the fact that macro-developmental strategy which was in vogue at that time was thought to be adequate to undertake the regional development.

The initiatives in favour for the development of Uttarakhand region in the development plans of Uttar Pradesh has undertaken since the Third Five Year Plan. Since then special attention is being given as far as the allocation of Plan funds are concerned for the development of Uttarakhand in the early seventies a decision was taken by the Central and Uttar Pradesh Government to treat the eight hill districts of Uttarakhand as a special planning region. The main motive in this regard was stated to be the reduction of inter-regional imbalances through the optimum utilisation of natural resources, to fulfil the need of local people and to increase the employment and income opportunities in this backward region.

A separate Hill Development Department was created in 1973-74 to formulate Five Year Plans for Uttarakhand region and to ensure integrated decision making and effective implementation of its development plans. The provision of special financial assistance was also granted by the Central Government which was in addition to the funds provided by the

State Government under its development plan. Since then Uttaranchal Development Department which was earlier known as Hill Development Department functions at secretariat level under the charge of a Minister and a Secretary. This department is expected to investigate, identify the potential areas of development, initiate a package of development approach which may be suitable in the area, to implement the programme and timely evaluate and monitor the launched programmes to make them more successful in the interest of the development of Uttarakhand. High priority areas suggested for the development in the region are horticulture, diversification of agriculture, development of tourism, animal husbandry, minor irrigation, forestry, soil conservation, development of local resource based industries, augmenting the availability of various infrastructural facilities, like, roads, power, marketing and credit institutions and fulfilment of basic needs and amenities of life like drinking water, elementary education and health facilities (draft Five Year Plan, 1978-83).

The allocation of outlay under the various heads of development programmes for Fifth Five Year Plan was Rs.225.22 crores which includes Rs.104 crores assistance provided by the Central Government. However, during Sixth Five Year Plan period the volume of actual expenditure on the development of Uttarakhand region has increased by around three-folds (Rs.657.87 crores) as compared to the amount of expenditure involved during the period of Fifth Five Year Plan. In fact

the share of Central Government assistance had doubled to Rs.256.83 crores during the same Plan period. Accordingly, the amount of actual expenditure on hill development during Seventh Five Year Plan period had reached to Rs.1213.16 crores and the share of assistance provided by Central Government had went upto Rs.679.19 crores. The provision of Plan outlay for the Eighth Five Year Plan is Rs.2743.85 crores in favour of Uttarakhand. The main heads of expenditure are agriculture and allied activities, energy, transport, education, games and cultural programmes, water supply, housing and urban development. The provisional expenditure under these heads together account for over 72 per cent of the total outlay as recommended for the Uttarakhand development. Accordingly the share of outlay for agriculture and allied activities is as high as 22.27 per cent followed by transport sector (13.80 per cent), water supply, housing and urban development (12.78 per cent) and energy sector (11.80 per cent). However, the share of outlay for water supply, housing and urban development has declined from 16.05 per cent in Seventh Five Year Plan period to 12.78 per cent in Eighth Five Year Plan period. The amount of Plan outlay for agriculture and allied activities has increased from Rs.239.89 crores to Rs.611.05 crores. In fact significantly much higher attention is given towards the development of energy sector during the Eighth Five Year Plan period. In this sector the Plan outlay has increased from Rs.124.22 crores to Rs.319.14 crores showing an increase of

157 per cent between Eighth Five Year Plan and last Plan period.

Problems of Development

It is surprising to note that in spite of the availability of rich natural resources in the region and several developmental efforts undertaken during planned development strategies with the allocation of a sizeable Plan outlay the Uttarakhand region of Uttar Pradesh has remained underdeveloped in certain economic and social aspects. The possible explanation behind the stagnation in the economic development of the region could be the problem of the identification of suitable package of development programmes which are accepted to local conditions in one hand and the beneficiary people on the other hand, lack of coordination among the various departments which are involved in the identification and implementation of development programmes and lack of timely evaluation and monitoring of the programmes, etc. Also, the geographical conditions, inadequately development of basic infrastructural facilities such as irrigation, power, marketing and credit, lack of industrialisation and institutional support, dearth of basic facilities such as drinking water, public health have caused the poorly development of the region. At the same time constraints in terms of long gestation period of projects and relatively higher per unit cost involvement in the development of infrastructure and the low

level of returns from investment, inadequately development of technology which could be suitable to the regional specific conditions are another important factors which are equally restructuring the process of development of Uttarakhand.

However, on the basis of the construction of certain indicators of socio-economic development it is sometimes focussed by the social scientists that the level of development of Uttarakhand region comparable to that of the state as a whole is not so poor. This could be correct while one apply the various statistical tools and appliances in this regard. But the significant fact is that the backwardness of the Uttarakhand region is a special case of backwareness in general and is due to its peculiar circumstances, and such as requires special types of techniques and programmes for its removal. This fact can be better appreciated by examining the conditions of the major sectors of economy of Uttarakhand in one hand and prevailing situation in the districts which are actually falling in purely Himalayan range.

No doubt analysing the availability pattern of per capita net domestic products across the districts of Uttarakhand and at state level we also found that during the period 1985-86 to 1988-89 the value of NDP for Uttarakhand is significantly at higher level as compared to state as a whole. However, the district level analysis depicted the fact that the value of per capita NDP of five districts, except the case of Uttarkashi, Nainital and Pithoragarh was much less than the state average in 1985-86. However, during 1988-89,

the per capita NDP of district Dehradun has increased slightly higher than the state average of Rs.1533. So the number of districts showing per capita NDP availability at lower extent than the state average has gone down to four from five in 1988-89, in fact the number of such districts were five till 1987-88.

Table 1 : District-wise Per Capita Net Domestic Production at Current Prices

(In Rs.)

District	Years			
	1985-86	1986-87	1987-88	1988-89
Almora	999.75	1120.59	1009.19	1304.42
Pithoragarh	1332.70	1599.06	1589.78	1836.08
Dehradun	984.73	1203.30	1148.50	1552.54
Pauri Garhwal	810.68	1129.87	847.18	1010.16
Chamoli	884.46	1031.20	1025.54	1313.71
Nainital	2100.53	2511.40	2522.81	2955.12
Tehri Garhwal	930.71	1127.42	925.09	1288.12
Uttarkashi	1625.94	1800.92	1745.74	1950.88
Uttarakhand	1289.14	1552.73	1475.25	1810.15
U.P.	1171.70	1222.01	1313.42	1532.77

Source : Eight Five Year Plan, Uttaranchal Development Department, Uttar Pradesh

Accordingly the estimates of per capita net domestic production at constant prices of 1980-81 reveals that beginning from the year 1985-86 to 1988-89 the value of per capita NDP for Uttarakhand region was remarkably higher than the state average, though the indices of per capita NDP are consistently increasing for both Uttarakhand and state as a whole over the years. But these values of indices are relatively at lower level for state average than the Uttarakhand in all corresponding years. However, considering the district level analysis in the prevailing situation of the availability of domestic production it is depicted that the corresponding figures for five districts excluding Nainital, Pithoragarh and Uttarakashi are significantly at lower level than the state average beginning from the year 1985-86 to 1988-89. It has further pointed out that most of the districts of Uttarakhand had shown very larger extent of inconsistencies in the trend of the generation of per capita NDP from different economic activities during the reference period. However, the indices of the availability of per capita NDP for most of the districts, excluding Uttarakashi has significantly increased in 1988-89 while we take 1985-86 as the base year. This increase was as high as around 119 per cent for Dehradun followed by Chamoli (117 per cent), Pithoragarh (114 per cent), Nainital (111 per cent) and 107 per cent each for Almora and Pauri Garhwal while the increase was at lowest level for Tehri Gahrwal (105 per cent) and negative increase of 96 per cent for Uttarakashi (Table 2).

Table 2 : District-wise Per Capita Net Domestic Production at Constant Prices, 1980-81

(In Rs.)

District	Years			
	1985-86	1986-87	1987-88	1988-89
Almora	684.97 (100.00)	615.59 (89.87)	600.73 (87.70)	729.12 (106.45)
Pithoragarh	891.78 (100.00)	895.31 (100.40)	915.80 (102.69)	1018.32 (114.19)
Dehradun	700.35 (100.00)	835.23 (119.25)	731.56 (104.46)	831.50 (118.73)
Pauri Garhwal	543.32 (100.00)	726.21 (133.66)	515.77 (94.93)	574.39 (105.72)
Chamoli	592.73 (100.00)	628.26 (105.99)	574.22 (96.88)	692.43 (116.82)
Nainital	1557.18 (100.00)	1763.40 (113.24)	1713.96 (110.07)	1735.00 (111.42)
Tehri Garhwal	686.84 (100.00)	701.97 (102.20)	540.70 (78.72)	721.34 (105.02)
Uttarkashi	1265.57 (100.00)	1217.97 (96.24)	1118.39 (88.37)	1213.16 (95.86)
Uttarakhand	936.16 (100.00)	1035.23 (112.14)	937.91 (101.60)	1029.96 (111.57)
U.P.	858.60 (100.00)	869.56 (101.28)	869.88 (101.31)	929.79 (108.29)

Source : Eight Five Year Plan, Uttaranchal Development Department, Uttar Pradesh

These existing trends of inconsistencies and fluctuations in the availability of per capita net domestic production over the years are the additional indicators of the under-development of the Uttarakhand region.

Situation of Agriculture

As indicated earlier that agriculture is the dominant and foremost economic sector of the Uttarakhand. However, with the unprecedently increasing trend of population in the region, the land-man ratio is consistently decreasing over the years. However, it has to be kept in mind that the land resources of the region are not determined by its geographical area alone but also the uses to which the land is actually being utilized for different purposes.

Land Use Pattern

In Uttarakhand the land area under the cultivation of agricultural crops is only 678 thousand hectares. This constitutes only 12.66 per cent of the total geographical area of the region. The forest based products are among the most important natural resources of the region which are covering around 64 per cent of the total reported area. With respect to land not available for cultivation, includes barren and uncultivated land area and, land put under non-agricultural uses, accounts for around 8 per cent. However, over 14 per cent of the land area is uncultivable known as Banjar land. This category of land includes permanent pastures, other grazing land and land utilized under miscellaneous trees and groves. The cultivable land area could be available for

cultivation whether taken up for cultivation or abandoned after a few years for one reason or the other, whereas the permanent pastures is the group of all grazing land area whether they are permanent pastures or meadows or not and the area under unidentified trees and groves may also be included in this category of land area (Swarup, 1983). On the other some land area is generally left uncultivated by the farmers for one crop season for the purpose of re-obtaining the fertility. This category of land is known as current fallow.

Table 3 : Land Use Pattern in Uttarakhand (1988-89)

Land	Area (in '000 ha.) % of area to total areas	
Geographical Area	5360	100.00
Forest Land	3424	63.88
Land not available for cultivation	425	7.93
Fallow Land	57	1.07
Other Uncultivated Land excluding Fallows	776	14.48
Net cultivated land	678	12.66
Area sown more than once	429	8.00
Gross cropped land	1107	20.66
Irrigated Land	223	-
Gross Irrigated Land	364	-
Percentage of Irrigated Land	32.89	-

However, the land area which is not utilized for cultivation for one or more years may be included in the category of other than current fallow. In Uttarakhand these both the categories of fallow land account for 57 thousand hectares during 1988-89. As was seen that the very small size of land area is used for the cultivation in Uttarakhand, in fact only 8 per cent of the total reported land area could possibly be available for the cultivation of both Rabi and Kharif crops. In other words, 66 per cent land area cannot be used for the cultivation of crops regularly for two seasons because of the loss of fertility and so the farmers are bound to leave this portion of land uncultivated for one crop season to regain the fertility. Thus the gross cropped area which includes net area sown for cultivation and area used for the cultivation of more than once accounts for 1107 thousand hectares.

40496

Size of Land Holdings

The subject of land holdings has been important in Indian agriculture because a large number of holdings are small and uneconomic in nature. This impeded the growth of agriculture production/yield rates because the small holdings defied the introduction of farm practices and proved a big handicap in the agricultural development of the country (Swarnup, 1983). Similar kind of situation is emerging in the

case of Uttarakhand if we consider the distribution pattern of the size of land holdings and the level of agricultural development in the region is concerned. The Uttarakhand is dominated by small and marginal land holdings. An overwhelming majority (87 per cent) of land holdings in the region comes in the category of small and marginal holdings and average size of holdings is only 0.99 hectare. And around 60 per cent of the operational land holdings in the region are less than one hectare and 94 per cent holdings are less than three hectares. The district-wise comparison shows that the average size of holdings in Alomora and Pithoragarh districts

Table 4 : Percentage Distribution of Land Holdings in Uttarakhand (1985-86)

District	Size of Holdings (in Hectares)					Total
	< 1	1-2	2-4	4-10	10+	
Nainital	10.9	14.8	26.9	31.7	15.0	100.0
Almora	44.9	31.3	18.1	4.9	0.8	100.0
Pithoragarh	46.9	23.2	17.4	6.3	1.2	100.0
Dehradun	28.0	20.4	26.1	19.3	6.2	100.0
Pauri Garhwal	14.7	22.5	31.1	23.9	7.8	100.0
Tehri Garhwal	30.9	35.9	25.6	7.2	0.4	100.0
Chamoli	30.2	33.0	26.4	9.4	1.0	100.0
Uttarkashi	19.8	26.6	36.4	15.8	1.4	100.0

Source : Eighth Five Year Plan, Uttaranchal Development Department, U.P., Lucknow.

are relatively lower than in remaining districts. In fact 75 per cent of holdings in Almora and 70 per cent of holdings in Pithoragarh consist of less than 2 hectares. However, the percentage of small holdings did not show much variation among remaining districts. The proportion of relatively larger holdings are dominated at higher level in Nainital (47.40 per cent) followed by Pauri Garhwal (31.7 per cent), Dehradun (26 per cent), Uttarakashi (17 per cent). However, in remaining districts, such category of holdings are 10 per cent in Chamoli, 7 per cent each in Pithoragarh and Tehri Garhwal while lowest proportion of them constitute in district Almora (6 per cent).

Irrigation Facility and the Problem of Agriculture Development

It is, further, noted that the potentials of water resources in the region are inadequately exploited. On account of unduling topography and hard rocky strata it has not been possible to provide irrigation facilities to a larger proportion of cultivated land area. As only one-third of the cultivated land area is reported to have the irrigation facility. In fact in most of the districts, excluding Nainital and Dehradun, the percentage of irrigated land area is much below the level of Uttarakhand as a whole. The irrigated land area of these purely hilly districts together constitutes to be only 10.28 per cent of the

cultivated land area. Even in districts Pithoragarh and Chamoli the irrigated land area available for cultivation accounts for only 6 per cent and 7 per cent respectively. One-third of irrigated land area sown for Uttarakhand as a whole is thus, due to fact that significantly much larger proportion of land area of Nainital and Dehradun is under the facility of irrigation. In districts Nainital and Dehradun the net irrigated land area available for the cultivation accounts for 73 per cent and 42 per cent respectively.

Table 5 : District-wise Cultivated Land and Irrigated Land Area

(Area in hectares)

District	Cultivated Land Area		Irrigated Land Area		Percentage of Area Irrigated	
	Net	Gross	Net	Gross	Net	Gross
Nainital	201326	240110	159486	247788	79.29	72.86
Almora	104460	171446	9797	19087	9.38	11.13
Pithoragarh	67843	121188	4908	8414	7.23	6.94
Dehradun	54010	84617	20135	35136	37.28	41.59
Pauri Garhwal	101315	154898	8909	16702	8.79	10.78
Tehri Garhwal	72279	118060	10701	20916	14.81	17.22
Chamoli	43721	66655	2486	2426	5.69	6.94
Uttarkashi	33316	49756	6663	11317	20.00	20.74
Uttarakhand	678280	1106730	223085	363986	32.88	32.89

Thus the agricultural production can not be increased at substantial level in Uttarakhand unless the planning strategies are initiated towards the development of water resources and to bring a larger land area under the irrigation facility. Because the adoption of improved variety of seeds and use of modern scientific fertilizers, pesticides and chemicals, which can increase per hectare productivity of agricultural production, may not be successful in the unirrigated land area. Similarly, these new package of inputs cannot be depend on rain only because rainfall is unequal and irregular and shows considerable variations from year to year. The tanks, lift irrigation and Government Canals are the main sources of irrigation in Uttarakhand region.

The cropping pattern in the region has not undergone any substantial change in the region, particularly in the purely hilly areas. The main agricultural crops grown in the region are paddy and pulses in Kharif season and wheat and barley in Rabi season. Wheat and paddy are grown on river valleys and areas having the facility of irrigation. In the high reaches where irrigation facilities are not available the inferior cereals like Mandua (kodu) and Jhungara is generally grown.

The intensity of cropping in the region is 163.3 per cent which is, in fact, relatively higher than the state average (146.7 per cent). However, the average yield rate of foodgrains for Uttarakhand are reported to be at lesser extent (14.60 qtls. per hectare) as compared to state as a

whole (15.09 qtls. per hectare). This again shows that the low level of irrigation facility available in the region in one hand and the use of modern fertilizers and other agricultural inputs at lesser extent on the other hand have lower down the per hectare productivity rate of foodgrains in Uttarakhand. As the per hectare consumption of fertilizers in 1985-86 was relatively much lower level in Uttarakhand (62.6 kgs.) as compared to the state average (780 kgs.). In other words the per hectare use of fertilizers is estimated as low as 8 kgs. in Uttarakhand as against 340 kgs. in plain areas of the state. The average production of foodgrains during last Fifth Five Year Plan period (1985-90) was 1440 metric tonnes. The highest level of production was reported in case of wheat (565 thousand MT) followed by rice (513 thousand MT), pulses (303 thousand MT) while the production level of other foodgrains together was 58 thousand metric tonnes. It has also to be noted that about 18 thousand hectares land area was additionally brought out under the cultivation of HYV during Seventh Five Year Plan period.

Conclusions

On the basis of above presented analysis it can be summerize that in spite of various efforts undertaken in favour of the economic development of Uttarakhand the region is still remained under-developed even today. The agricul-

ture is the main source for providing employment and income opportunities to the labourforce and as the major source of livelihood of the population in the region, which itself is not capable to provide productive employment to those who are engaged on it. The population in the region is consistently increasing as a consequence the labourforce is on the increase at similar level. But the employment opportunities are not increasing in that proportion of the increase of labourforce. As a result the flow of outmigration of labourforce from the region is consistently increasing over the years which are not good sign from the view point of the development of Uttarakhand. Because the migration tendency is considerably at larger extent among the human resources which have acquired relatively higher level of education, possessing cognitive skills, and better productive efficiency. In the absence of productive employment, outside agricultural activities in the region they are forced to move outside Uttarakhand in search of productive employment opportunities and which suited to their productive knowledge and educational capability.

The potential of the development of agricultural sector in Uttarakhand are bound by several geographical factors including the nature of terrain, scattered marginal and steep sloppy land holdings. At the same time the use of improved variety of seeds, modern fertilizers, pesticides and chemicals so as to increase the productivity level is also restricted by the fact that sizeably a larger part of

cultivated land area cannot be provided the facility of irrigation on account of undulating topography and hard rocky strata. Even the use of modern technology in the cultivation of land is very difficult particularly in its application in the relatively very small size of land holdings available in Uttarakhand. Thus the main constraints in the development of agriculture sector are scanty cultivable land, overwhelming percentage of small and marginal holdings, difficult agricultural conditions, sparse settlement pattern of villages and severe soil erosion. The alternative approach to increase the avenues of employment and incomes in Uttarakhand would be to initiate the farmers in favour of changing the cropping pattern. The available land area in the region could be used for the cultivation of suitable commercial crops and growing of fruits and vegetables.

References

1. Joshi, M.D., Development of Hill Region of U.P., A.K. Singh, T.S. Papola and R.S. Mathur (eds.), Economic Policy and Planning in India, Sterling Publishers Pvt. Ltd., New Delhi, 1984.
2. Joshi, P.C., Perspectives of Planners from Above the Peoples Perceptions from Below : The Problem of Briding the Hiatus, T.S. Papola and B.K. Joshi (eds.), Development of Hill Areas : Issues and Approaches, Himalaya Publishing House, New Delhi, 1983.
3. Khanka, S.S., Labourforce, Employment and Unemployment in a Backward Economy, Himalayan Publishing House, 1988.
4. Mehta, G.S., Problems and Potentials of Horticulture Development, A.K. Singh (ed.) Planning Strategy for Developing Region, Print House (India) Lucknow, 1990.
5. Mehta, G.S., Characteristics and Economic Implications of Migration, Journal of Rural Development, Vol.XX, No.6 November, 1991.
6. Singh, A.K., Economic Development of the Hill Region of Uttar Pradesh in Relative Perspective, T.S. Papola, B.K. Joshi (eds.), Development of Hill Areas, Himalaya Publishing House, 1983.
7. Singh Katar, A New Strategy for Economic Development of Uttar Pradesh Hills, T.S. Papola and others (eds.), et.al., 1983.
8. Singh, V.S., Development Strategy for U.P. Hills, A.K. Singh (ed.), Planning Strategy for a Developing Region, Print House (India), Lucknow, 1990.
9. Sgarup Raghunandan and Sikka B.K., Agricultural Development in Himachal Pradesh, Agricole Publishing Academy, New Delhi, 1983.
10. Uttaranchal Development Department, Government of U.P., Eighth Five Year Plan, 1992-97.